

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A method to ~~guarantee for a service a bandwidth across~~
deliver across an access network a data stream requiring a bandwidth and a ~~with a~~ quality of
service, ~~said access network comprising an edge node, a plurality of subscribers being coupled to~~
~~said access network~~, said method comprising: ~~the step of~~

provisioning a plurality of virtual connections capable of meeting bandwidth and quality
of service requirements between a plurality of users coupled to said access network, and an
access server of said access network coupled to a content provider operable to deliver said data
stream; and, ~~whereof each virtual connection is established between one of said plurality of~~
~~subscribers and said edge node, characterized in that said method further comprises the steps of:~~

[[-]] ~~upon request of said service by a subscriber out of said plurality of subscribers,~~
requesting, by a user out of said plurality of users, said data stream from said content provider,

wherein after a user has requested said data stream from said content provider, and if the
user lacks support for negotiating or acknowledging the bandwidth through said access network
with said quality of service, said method further comprises:

identifying a virtual connection out of said plurality of virtual connections capable of
guaranteeing said quality of service between said ~~subscriber~~ user and said ~~edge node~~ access
server[[,]];

[[-]] checking whether said virtual connection can convey said bandwidth[[,]]; and

[[-]]according to the outcome of said checking ~~step~~whether said virtual connection can convey said bandwidth, granting or denying said service to said subscriber allowing or disallowing said data stream to be delivered over said virtual connection to said user.

2. (currently amended): ~~A method~~The method according to claim 1, ~~characterized in that said method further comprises the steps of~~comprising:

[[-]]if said virtual connection cannot convey said bandwidth, ~~check~~checking additionally whether said access network can accommodate said bandwidth between said ~~subscriber user~~ and said ~~edge node access server~~ along said virtual connection; and[[,]]

[[-]]according to the outcome of said additional checking ~~step~~:

[[-]]adapting the capacity of said virtual connection for it to convey said bandwidth and allowing said data stream to be delivered to said user~~granting said service to said subscriber,~~

[[-]] or disallowing said data stream to be delivered to said user ~~else denying said service to said subscriber.~~

3. (currently amended): ~~A method~~The method according to claim 1, ~~characterized in that said method comprises the preliminary steps of~~further comprising:

[[-]]provisioning a virtual path across said access network, the bandwidth of which being determined from a traffic load expected from said plurality of ~~subscribers,~~ users;

[[-]]aggregating said plurality of virtual connections over said virtual path_i[[,]]

[[-]]disabling any connection admission control means in said access network that may prevent ~~from the~~ aggregating said plurality of virtual connections over said virtual path_i[[,]]

~~and in that said method further comprises the steps of:~~

[[-]]if said virtual connection can convey said bandwidth, checking additionally whether said virtual path can convey said bandwidth; and

[[-]]according to the outcome of said additional checking step, allowing or disallowing said data stream to be delivered over said virtual connection to said user~~granting or denying said service to said subscriber.~~

4. (currently amended): A method according to claim 1, ~~characterized in that said method comprises the preliminary step of further comprising:~~

provisioning a virtual path across said access network, the bandwidth of which being determined from a traffic load expected from said plurality of ~~subscribers~~users; ~~and in that said method further comprises the steps of:~~

[[-]]if said virtual connection can convey said bandwidth, checking additionally whether said virtual path can convey said bandwidth[[,]]; and

[[-]]according to the outcome of said additional checking ~~step~~;

[[-]]connecting said virtual connection to said virtual path and allowing said data stream to be delivered to said user~~granting said service to said subscriber,~~

[[-]]or disallowing said data stream to be delivered to said user~~else denying said service to said subscriber.~~

5. (currently amended): ~~A method~~The method according to claim 3, ~~characterized in that wherein~~ the bandwidth of said virtual path is determined according to a statistical traffic law,

given a number of virtual connections multiplexed over said virtual path, a traffic load per user and a service deny probability.

6. (currently amended): ~~A method~~ The method according to claim 3, ~~characterized in that wherein~~ the number of virtual connections multiplexed over said virtual path is determined according to a statistical traffic law, given a bandwidth of said virtual path, a traffic load per user and a service deny probability.

7. (currently amended): An access network operable to convey a data stream requiring a bandwidth and a quality of service comprising an edge node, a plurality of subscribers being coupled to said access network, said access network comprising:
an access server coupled to a content provider operable to deliver said data stream;

administration means adapted to provision a plurality of virtual connections capable of meeting bandwidth and quality of service requirements between a plurality of users coupled to said access network, and the access server; and, ~~whereof each virtual connection is established between one of said plurality of subscribers and said edge node, characterized in that said access network further comprises~~

access resource control means adapted to, after a user out of said plurality of users has requested said data stream from said content provider, and if said user lacks support for negotiating or acknowledging through said access network said bandwidth with said quality of service[::]

[[~~-~~]] ~~upon request of a bandwidth across said access network with a quality of service for a subscriber out of said plurality of subscribers requesting a service,~~ identify a virtual connection out of said plurality of virtual connections capable of guaranteeing said quality of service between said subscriber-user and said edge-node access server,

[[~~-~~]] check whether said virtual connection can convey said bandwidth,

[[~~-~~]] according to the outcome of said ~~checking step~~ check, allow or disallow said data stream to be delivered over said virtual connection to said user ~~grant or deny said bandwidth to said service.~~

8. (currently amended): ~~An access-~~ The access network according to claim 7, ~~characterized in that~~ wherein said access resource control means are coupled to said administration means, ~~in that~~ said administration means are further adapted to adapt the capacity of said virtual connection, and in that said access resource control means are further adapted to:

[[~~-~~]] if said virtual connection cannot convey said bandwidth, check additionally whether said access network can accommodate said bandwidth between said subscriber-user and said edge-node, access server; and

[[~~-~~]] according to the outcome of said additional ~~checking step~~ check:

[[~~-~~]] trigger said administration means to adapt the capacity of said virtual connection for it to convey said bandwidth and allow said data stream to be delivered over said virtual connection to said user ~~grant said bandwidth to said service, or~~

[[~~-~~]] disallow said data stream to be delivered to said user ~~else deny said bandwidth to said service.~~

9. (currently amended): ~~An access~~ The access network according to claim 7,
~~characterized in that wherein~~ said administration means are further adapted to:

[[-]] provision a virtual path across said access network, the bandwidth of which
being determined from a traffic load expected from said plurality of ~~subscribers~~, users;

[[-]] aggregate said plurality of virtual connections over said virtual path; and [[,]]

[[-]] disable any connection admission control means in said access network that may
prevent from aggregating said plurality of virtual connections over said virtual path,
and ~~in that wherein~~ said access resource control means are further adapted to:

[[-]] if said virtual connection can convey said bandwidth, check additionally
whether said virtual path can convey said bandwidth,

[[-]] according to the outcome of said additional ~~checking step~~ check, allow or
disallow said data stream to be delivered to said user ~~grant or deny said bandwidth to said service~~.

10. (currently amended): ~~An access~~ The access network according to claim 7,
~~characterized in that wherein~~ said access resource control means are coupled to said
administration means, ~~in that~~ said administration means are further adapted to:

[[-]] provision a virtual path across said access network, the bandwidth of which
being determined from a traffic load expected from said plurality of ~~subscribers~~ users; and [[,]]

[[-]] connect said virtual connections to said virtual path,
and ~~in that wherein~~ said access resource control means are further adapted to:

[[-]]if said virtual connection can convey said bandwidth, checking additionally whether said virtual path can convey said bandwidth; and [[,]]

[[-]]according to the outcome of said additional checking step: [[,]]

[[-]]trigger said administration means for it to connect said virtual connection to said virtual path and allow said data stream to be delivered to said user~~grant said bandwidth to said~~ service, or

[[-]]disallow said data stream to be delivered to said user~~else deny said bandwidth to~~ said service.